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The effect of restrictive measures on cross-border investment in the European Union

Wildmer Daniel Gregori, Michela Nardo*

Abstract

This study sheds light on the effect of restrictive policies, such as screening mechanisms, on mergers and acquisitions (M&A) flows into EU Member States in the period 2011-2018, by implementing an augmented gravity model. The results show that different restrictive measures affect cross-border investments unequally, and that the presence of screening mechanisms per se does not negatively affect cross-border investments. When we perform the analysis by sector, results suggest that cross-border investments in manufacturing and non-financial services are negatively by restrictive measures, such as restrictions on foreign personnel being employed in key positions, or restriction on the establishment of branches, land acquisition or profit and capital repatriations.

Keywords: cross-border investment, M&A, EU, FDI, statutory restrictions, gravity model.

JEL codes: F15, F21, G34, K20.

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1. Introduction

Despite concerns about an economic slowdown in latest years,[1] globalization increased the importance of foreign direct investment (FDI) worldwide. In 2018 inward FDI positions into the EU28 (8.9 tn Euro) represented 54.6% of European GDP, 15 percentage points higher than before the crisis. About 40% of all inward FDI in 2017 are generated from US, first investor in Europe before Switzerland, Canada and Japan (Figure 1). China (considering also Hong Kong) is the 5th investor in Europe, with 3.5% all of FDI positions. Offshores stand up as the extremely important in channelling investments into Europe.[2]

Economic theories considered FDI as an asset for host countries as foreign takeovers are likely to bring along superior technology, easing technology diffusion, and increase productivity by shifting production toward more sophisticated technologies or goods (Hale and Xu, 2016). The empirical literature on FDI actually points to a positive link between FDI and GDP growth (Iamsiraroj and Doucouliagos, 2015)[3]. This seems to be related to the degree absorptive capacity of the host country. In particular, the largest impact of FDI on growth is observed for open economies with an educated workforce and developed financial markets (Bodman and Le, 2013). The effects on employment are less clear and go from a decrease in short terms due to the introduction of labour saving technologies (Hijzen at al, 2013) to an increase in the longer term. This is obtained by forcing a change in workforce composition towards more skilled workforce (Dinga and Mnich, 2010).

Besides economic theory, in everyday news we see that not all FDIs are equally welcome. The political momentum that perceives as crucial the need to protect domestic technologies, companies and markets from foreign control or from the suspect of forced technology transfer has led to careful scrutiny and occasionally block of foreign investments. Examples are the recent U.S. ban on Chinese acquisition attempts targeted to advanced technologies such as 5G, artificial intelligence, biotechnology, virtual reality, and other dual-use technologies (USCC, 2019), or the German veto in 2018 to the acquisitions of a 20 percent stake in high-voltage energy network operator 50Hertz and of Leifeld Metal Spinning, a company with customers in the aerospace, chemicals and automotive industries.

[1] Inward flows dropped 44% with respect to a peak of 3.9% of GDP in 2015.
[2] Offshores include Bermuda, Bahamas, Cayman, Gibraltar, Guernsey, Jersey, and UK-Caribbean.
[3] There are also dissonant voices claiming a non-significant or even negative link between FDI and growth (see Bermejo Carbonell and Werner, 2018).

[Fig. 1 – Non-EU investments in Europe – around here]

In Europe, as of December 2019, only 15 out of 28 Member States have FDI review mechanisms in place[4], differing widely in scope (e.g., review of intra- or extra-EU FDIs, differing screening thresholds, breadth of sector coverage), process (e.g., pre-authorization vs. ex post screening of FDI), review timetables and enforcement. On 5 March 2019, the European Parliament and the Council of the European Union formally adopted a new regulation on foreign direct investment (FDI) screening (EU Regulation 2019/452). The regulation, which will be fully operational in October 2020, introduces a coordination mechanism whereby the European Commission may issue non-binding opinions on FDI reviews performed in an EU Member State when they affect security and public order.

A research question, still open, is whether the presence of a screening mechanism (and more generally regulatory barriers) is indeed a deterrent to foreign investments. This issue is the reason behind the initial hesitation of some European Member States to back the new regulation. To address these questions, we estimate a gravity model linking cross-border M&A flows between 2011 and 2018 in 23 European countries to the FDI restrictions as measured by the OECD FDI Regulatory restrictiveness Index. This index aims to capture a plurality of institutional features that could influence FDI, from equity or key personnel restrictions applied to foreign investors, to limitations in the establishment of branches, acquisition of land or clauses on capital/profit repatriation. We find that the presence of a screening mechanism do not negatively affect cross-border investment per se. Instead, other types of restrictions play a central role especially those related to the establishment of branches or repatriation of profits.

Our model is in line with Mistura and Roulet (2019). They analyse the effect of FDI restrictions on bilateral FDI positions (from national accounts) and cross-border M&A stocks (from Dealogic data) for the period 1997-2016. They find that a drop in the restrictive index by 10% due to the implementation of liberalization polices, could generate an additional amount of bilateral FDI positions (M&As) as large as 2.1% (3%) on average. Our result is much stronger as a 1 point drop in the Restrictive Index implies a growth of 1,2% in M&As flows on average. The difference is due to the sample used and the smaller time interval encompassing, in the case of Mistura and Roulet, the financial crisis and the plunge of cross-border capital flows. Contrary to Mistura and Roulet (2019) we discard the use of official FDI data coming from national

[4] Austria, Denmark, Finland, France, Germany, Hungary, Italy, Latvia, Lithuania, the Netherlands, Poland, Portugal, Spain, Sweden, United Kingdom.

accounts but rather use micro data on M&A deals coming from the Bureau van Djik Zephyr dataset (very similar to Dealogic). Official bilateral FDI data actually measure the link between the declaring country and the first partner country, which not necessarily is the ultimate owner of the investment,[5] therefore biasing gravity measures and distorting interpretations. We also refrain from mimicking official investments positions using the cumulated flows of M&As. Even If theoretically possible it presents several shortcomings given current data availability. Among them undeclared M&A deal values, time mismatch between announcements and transactions, and transactions in kind (e.g. transfer of intangibles).

A novelty of our paper consists in analysing M&A flows in different economic sectors to account for the sector-specific impact of restrictive policies. Using an augmented gravity framework, we show that different restrictive measures unequally affect cross-border investment in different sectors. While FDIs in the primary sector remains largely unaffected by changes in the restrictive index, M&As in the secondary and tertiary respond to different restrictions. As expected, manufacturing and services are mostly affected by restrictions in the establishment of branches or repatriation of profits, while limitations in equity holdings only affect manufacturing. Furthermore, financial services, a highly regulated sector, behaves differently from the rest of tertiary and remains largely unaffected by changes in the index.

Our findings are also in line with and contribute to the literature on the links between regulatory barriers and trade flows. Not surprisingly, trade flows are complements to cross-border capital flows (Ansgar and Clemens, 2018). Van der Marel and Shepherd (2013) analyse the relationship between trade in services and regulation, finding a negative link between regulatory restrictiveness and trade flows, whose strength results to vary across sectors. Nordås and Rouzet (2017) confirm this result. In their gravity model linking the trade in services with regulatory restrictions, tighter restrictions decrease both trade and investments, with the exports of services resulting more sensitive than imports.

This work also contributes to the research line in trade models that employ gravity models to analyse FDI determinants (among others, see Carrere, 2006; De Sousa et al., 2012; Heid and Larch, 2016; Nordås and Rouzet, 2017 for a comprehensive view of the extensive literature). The literature has examined a wide range of *push and pull* factors without offering a clear view on which are the decisive ones (Blonigen, 2005). Blonigen and Piger (2014), identify as main enabling factors the traditional gravity variables such as cultural

[5] See OECD BMD4 manual at http://www.oecd.org/investment/investment-policy/fdibenchmarkdefinition.htm. For a pilot study to produce official bilateral FDI statistics based on ultimate ownership, see the concluding document of the Task Force co-chaired by Eurostat and the European Central Bank with the participation of 24 countries, the OECD, the IMF and UNCTAD (https://www.parlament.gv.at/PAKT/EU/XXVII/EU/00/56/EU_05688/imfname_10945651.pdf.

distance, the difference in labour endowments and the presence of trade agreements. They find little relevance of pull factors such as multilateral trade costs, host country's business costs, infrastructure or political institutions. Our results are in line with their findings. In our baseline model contiguity, common language, political links, and trade openness are all enabling factors of cross-border investments, while government effectiveness results non-significant in explaining M&A flows. Different results are found by Bénassy-Quéré et al. (2007). By using gravity equations on national account FDI positions for OECD countries between 1985 and 2000, they obtain a positive impact of institutional quality on bilateral FDI, suggesting that bureaucracy, corruption, information, banking sector and legal institutions are important determinants of inward FDI. These results confirm that of Di Giovanni (2005): institutional factors and domestic financial conditions are important in stimulating cross-border M&A. The link between trade agreements and currency unions and cross-border investments is also an open question. Eicher et al. (2012) find a positive link only under specific conditions, while the potential market opportunities of the host country is identified as a decisive pulling factor. Recently, Economou (2019), focusing on Greece, Italy, Portugal, Spain, confirms the relevance of market size and gross capital formation to attract FDIs, while unit labour costs is found to have a negative impact of cross-border investments. In our estimations, regional trade agreements are not significant while trade openness and the bilateral links with other EU countries of the single market are highly significant.

The remainder of the paper is organised as follows. Section 2 illustrates the dataset, while Section 3 specifies the model. Section 4 presents the results and a related discussion. Section 5 focuses on robustness checks, while Section 6 concludes.

2. Data

The dataset used has a mixed origin. Cross-border M&A data are from Bureau van Djik Zephyr database, a Moody's analytics product. Zephyr is widely used in the literature (Reiter 2013, Clo' et al. 2017; Del Bo et al. 2017, among others) and provides information on M&As, portfolio investments and Joint Ventures deals worldwide starting from 1997 with a daily update. Information come from a wide range of sources, including financial journals, reports, company press releases, and company websites. We focus only on completed cross-border deals where the target company is in EU28, excluding rumoured or uncompleted deals to

increase the quality of our dataset.[6] For each deal, we have include information on the origin of the investor and target (destination) country of the cross-border investment, year of the agreement, sector of the target company and deal value in nominal terms[7]. The starting point of our analysis is linked to the availability of FDI regulatory restrictiveness index (RI), used as explanatory variables and published annually by the OECD since 2010.[8] RI measures the statutory restrictions on foreign investors or investments for OECD countries. Four types of measures are identified and measured by the index: (1) limits on foreign equity, to account for limits on foreign participation, holdings and ownership; (2) restrictions on foreign personnel being employed in key positions, to account for measures such as time-bound or economic limits on the employment of foreign personnel as managers and requirements related to the nationality of board of directors' members; (3) other restrictions such that restrictions on the establishment of branches, acquisitions of land for business purposes, profit or capital repatriation, but also reciprocity clauses in specific sectors; and (4) existence of screening and prior approval, to account for screening mechanism applied only to foreign investors. The RI ranges from 0 to 1, and it is calculated as linear aggregation of four sub-indicators corresponding to the four typologies of restrictions considered. RI is also available at the sectoral and subsectoral levels.[9]

Additional control variables needed to implement the gravity model are the GDP of origin and destination countries and the distance between each country pair, calculated as distance between the biggest cities of those countries (following De Sousa et al., 2012, inter-city distances are weighted by the share of the city in the overall country's population). GDP and Distance data are taken from the CEPII[10] database until 2015 and from the World Bank[11] for the last two years of the sample. The augmented gravity model includes a series of country-pair information that, according to the literature, may affect cross-border

[6] Actually, Zephyr also reports announced deals and rumors. We exclude these deals form the analysed data to avoid introducing noise.

[7] We prefer to use nominal and not real values for a number of reasons. Firstly inflation adjustments are based on subjective elements (baskets or proxies representing the true unknown deflator), and secondly there is no clear empirical evidence that agents base their decisions on real instead of observed market values (Werner, 2013)

[8] The FDI Index is also available for many countries for the following years: 1997, 2003, 2006, 2010-2018. For a detailed explanation, see https://www.oecd.org/investment/fdiindex.htm and Kalinova et al. (2010).

[9] Sectors are divided as follows: primary, secondary and tertiary, without including real estate. Subsectors are divided as follows. The primary sector is divided into (1) agriculture, (2) forestry, (3) fishing and (4) mining and quarrying. The secondary sector is divided into (5) food and other manufacturing, (6) oil refining and chemicals, (7) metals, machinery and other minerals, (8) electronic, electrical and other instrument and (9) transport equipment. The tertiary sector is divided into (10) electricity, (11) construction, (12) wholesale trade, (13) retail trade, (14) transport land, (15) hotels and restaurants, (16) media, (17) telecommunications, (18) banking, (19) insurance, (20) other finance (including securities and commodities brokerage, fund management, custodial services) and (21) business services. There is also an independent subsector: (22) real estate.For a detailed explanation of the index, see Kalinova et al., 2010.

[10] The database is available at http://www.cepii.fr. Mayer and Zignago (2011) offer additional details on the construction of the CEPII's database on geographical distance.

[11] See https://data.worldbank.org/.

investment, specifically: *contiguity*, *common language*, *former colonial links*, *common legal origin*, *time difference*, the inclusion of both countries into a *regional trade agreement* (source: CEPII database). We also include additional information for each destination country that could constitute a pull factor for foreign investments. These are *Government effectiveness*, which captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. *Regulatory quality* that refers to perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. Both yearly indicators are taken from the World Government Indicators[12] and they estimated at the country level, in units of a standard normal distribution, ranging from approximately -2.5 to 2.5 (for a detailed explanation, see Kaufmann et al., 2011). Lastly, we include *Trade openness* (calculated as the ratio of the sum of import and export to GDP) using data from the World Bank and a *Tax indicator*, from the KPMG database[13] of corporate tax rate, computed for each year as the difference between the destination country's tax rate and the average tax rate of all the destination countries in the dataset.

In order to have coherent dependent and explanatory variables we sum-up M&A deals at the same subsectoral level available for the RI by using NACE codes. Ultimately, for each pair of destination-origin country and year, our dataset has 22 subsectors with the amount of M&A performed. As the RI is computed only for EU member States also part of the OECD countries, therefore our analysis is restricted to those 23[14]. Tab. 1A reports overall summary statistics, while Tab. 1B shows summary statistics of the main variables by sector.

[Table 1A — around here]

[Table 1B — around here]

[12] See https://info.worldbank.org/governance/wgi/.

[13] See https://home.kpmg/xx/en/home/services/tax/tax-tools-and-resources/tax-rates-online/corporate-tax-rates-table.html.

[14] The EU Member States included in our dataset are Belgium, Czechia, Denmark, Germany, Estonia, Ireland, Greece, Spain, France, Italy, Latvia, Lithuania, Luxembourg, Hungary, the Netherlands, Austria, Poland, Portugal, Slovenia, Slovakia, Finland, Sweden and the United Kingdom.

3. Model specification

The empirical trade literature has extensively used the gravity model since the seminal paper of Tinbergen (1962) and the theoretical foundations provided by Anderson and Van Wincoop (2003).[15] Gravity equations identify as basic determinants of bilateral transactions the size of trading partners and their distance. These explanatory variables well fit trade volumes explaining a large share of the variance in bilateral flows. More recently, the gravity equation approach has paved the way to analyse FDI determinants (see, among others, Di Giovanni; 2005, Bénassy-Quéré et al., 2007; Hijzen et al., 2008, Head and Ries, 2008; De Sousa and Lochard, 2011). We contribute to this literature by estimating an augmented gravity model, to capture the links between cross-border M&A flows and target country's regulatory measures. Our key explanatory variable is the OECD Restrictiveness Index, and the baseline equation is as follows:

$$M\&A_{ijk,t} = \exp[\beta_0 + \beta_1 RI_{jk,t-1} + \beta_2 \ln(Distance_{ij,t-1}) + \beta_3 \ln(GDP_{i,t-1}) + \beta_4 \ln(GDP_{j,t-1}) + \boldsymbol{\gamma Bilateral\_I_{ij,t-1}} + \boldsymbol{\omega\, Government\_I_{j,t-1}} + \nu_{EU} + \delta_t + \varphi_k + \varepsilon_{ij,t}] \quad (1)$$

where $M\&A_{ijk,t}$ represents the flow of cross-border M&A, in thousands of euros, from country *i* to country *j* in subsector *k* at time *t*, with *j=1,…, 23* identifies the target EU Member States and *i=1,…,92* identifies the investor (origin) country. Therefore, the dependent variable shows for each sector for each country pair the amount of investment done in a specific year. Following Mistura and Roulet (2019), all explanatory variables are lagged by 1 year to reduce potential endogeneity issues. $RI_{jk.t-1}$ is the OECD FDI Restrictiveness index for target country *j* in sector *k* at time *t-1*. We include standard gravity variables, specifically the *distance* between each country in pair *ij*, the *GDP* of both the origin country and the destination country, respectively *i* and *j*. The model is enlarged and includes further control variables, grouped into two vectors, $\boldsymbol{Bilateral\_I}$ and $\boldsymbol{Government\_I}$. The former embodies time-invariant characteristics between country *i* and country *j*, specifically: contiguity, common language, former colonial links, common legal origin, time difference and the agreement of both countries to be part of a regional trade agreement. The vector $\boldsymbol{Government\_I}$ instead features time-variant characteristics of the destination countries: Government effectiveness, Regulatory quality, Trade openness and Tax indicator. Additionally, we include a dummy equal to one when the investor is located in EU, denoted ν_{EU}. This is done to capture the effect of the common EU market and

[15] Further contributions to the theoretical micro-foundations are provided by Helpman et al. (2008) and Melitz and Ottaviano (2008), which show that heterogeneous firms models are compatible with the gravity approach. See Head and Mayer (2014) for a detailed explanation of the theoretical background and micro-foundations of gravity equations.

the widespread integration of production chains that could within EU countries. δ_t denotes year fixed effects and captures global shocks. φ_k is the sector fixed effects, to control for persistent differences among sectors. Finally, $\varepsilon_{ij,t}$ is the zero-mean error. To account for potential heteroscedasticity, standard errors are clustered by country-pair.

The model is estimated using Poisson Pseudo Maximum Likelihood (PPML) estimators, as our dependent variable often assumes a value equal to zero (Santos Silva and Tenreyro, 2006; Head and Mayer, 2014). This happens whenever, for each sector, a country-pair does not have M&A flows. In this case, we insert a zero to include in our analysis every bilateral relation.[16] As suggested by Helpman et al. (2008), the presence of a high frequency of zeros in the dependent variable bias the gravity regressors obtained from log-linearized ordinary least squares (OLS), as taking logs clear the sample from null observations. An additional advantage of the PPML estimators is its robustness to heteroscedasticity in log-linear gravity equations, considering that the scale of the residual and the countries' GDP could be correlated (Nordås and Rouzet, 2017).

4. Results and discussion

4.1. Baseline results

Equations (1) to (4) in Tab. 2 have as explanatory variable the global RI, which includes all type of restrictions, and stepwise all control variables.[17] Results show that restrictions have a sizable negative effect on the amount of cross-border M&A. *Ceteris paribus*, a drop of 1% in the Restrictiveness Index is likely to increases M&A flows by 1.34% on average[18] (column 4). The negative link between regulation barriers and investment flows holds throughout all specifications (1) to (4) with coefficients always significant at 1 per cent level. This confirms that regulatory barriers to foreign investment are indeed an obstacle and additional

[16] We create a matrix with a dimension equal to the number of origin countries (92) multiplied by the destination country (23) and by the number of sub-sectors (22). This makes 46,552 country-subsector pairs per year, for a total of 372,416 observations. As shown in Tab. 1, in our time span we have positive M&A deal values in 7,294 cases and thus all the other relationships are filled up with zeros.

[17] The results of the basic gravity model estimation is in column 1. The augmented gravity model with year fixed effects is in column 2, including a series of control variables (Bilateral Indicators) that take into consideration specific characteristics of each country-pair. Column 3 accounts for government Indicators and Column 4 reproduces the full gravity model in equation (1) including sector fixed effects. Equations (5) to (8) replicate the analysis of the full model, differentiating the four components of the Restrictiveness Index. In all specifications, the dependent variable is the yearly amount in thousand Euro of bilateral cross-border M&A observed in each subsector.

[18] To compute the M&A flow's variation for specification (4) in Tab. 2, we solve the following equation: $\Delta M\&A = \left[\exp\left(-\Delta RI * (-1.33)\right) - 1\right] * 100$. In our case, ΔRI is equal to 1, which is the imputed % variation of the "RI – all types of restrictions".

gains in terms of M&As flows could be obtained by decreasing or eliminating them. This result is stronger than the findings of Mistura and Roulet (2019). They actually obtain that 10% decrease in the index is likely to imply 3% increase in M&As in their model with 60 countries and over the period 2001-2016. Besides the difference in the time frame and sample size,[19] our analysis is based on flow data which are, by nature, more volatile than stocks to variations of investment barriers.

The breakdown of the global index into components to account for the different typology of restrictions provides further interesting insights. Equity restriction and key foreign personnel have significantly negative effect on M&A flows. A 1% decrease of each sub-index generates a variation in cross-border investment of 1.19%, 10.49% respectively. The variable *other restrictions* (i.e. restriction on the establishment of branches, land acquisition or profit or capital repatriations, etc.) is the sub-index with the highest effect in investment flows, both in terms of magnitude and statistical significance. A decrease by 1% is likely to imply a surge of 22.59% in cross border investments. Furthermore, we find that specific regulatory measures adopted have higher and differentiated impact on cross-border flows, depending on the regulatory measure and (anticipating the results explained below) the sector analysed.

Surprisingly, the sign of the screening approval is positive and not negative as one may expect. This variable, however, turns out to be not significant when robustness checks are implemented (see the next subsection), while all the other variables maintain their sign and significance. As noticed by Mistura and Thomsen (2017), countries having screening mechanisms in place tend, on average, to have more restrictions in other areas as well (hence the lack of significance of the screening variable). In fact, in some countries (e.g. France), the screening mechanism may include, as conditions for the authorization, restrictions e.g. in the percentage of equity holding. This suggests that the presence of a screening mechanism is not *per se* an obstacle to foreign investments. Besides, usually M&As are asset specific, thus less sensitive to the presence of screening mechanisms (Nocke and Yeaple, 2007). Additionally, the OECD index excludes pure national security approvals, nor does it take into account the difference in applications across countries. Unfortunately data on deals subject to screening with the corresponding decisions are not available (usually they are confidential data). Therefore, the analysis on the link between screening mechanisms and foreign investment that would require data on both authorised and blocked deals is currently impossible.

[19] Mistura and Roulet(2019) data encompass the financial crisis with the dramatic plunge of cross-border investment.

The other control variables mainly confirm the expected results and are in line with expectations and literature. Positive and significant coefficients related to GDP in the host country confirms that wider market size make cross-border investments are more attractive for foreign investors in terms of additional possibility to expand businesses, create economies of scale or reduce production costs (Eicher et al, 2012). Likewise, the dynamism of investing country is positively related to cross-border flows. Cultural similarities (same language or former colonial relationship) foster investment flows, as well as the membership of the European Union. A 1% decrease in restrictiveness would foster intra-EU trade by more than 7% on average, pointing to a deeper economic integration within EU countries via a lowering of residual barriers. The regional trade agreement variable turns out to be non-significant. This depends of the fact that in EU countries trade agreements are negotiated centrally by the European Commission and are then adopted in national legislations. Eicher et al. (2012) find that trade agreements do not encourage cross-border FDI, while Bergstrand and Egger (2007) obtain a positive relationship only if transport and investments costs are not included.

The indicators of distance between the investor and the target give mixed results (as in Mistura and Roulette, 2019). We find a negative and significant relationship between distance and cross-border flows, as we should expect in theory, but the variable expressing the time difference between countries is positively linked with M&A, supporting the view that it is a driving force of international relationship, possibly related to vertical integration in the production process (Marjit, 2007). Trade openness attracts investment, which suggests a complementarity between FDI and trade (Belke and Clemens, 2018).

In our model, government effectiveness, regulatory quality and the tax indicator do not have a significant effect on M&A flows, implying the predominance of market factors over institutional aspects in driving cross-border investments. This is in line with the contrasting literature results observed in the literature (see Gherghina, Simionescu and Hudea, 2019 for a review).

[Tab. 2 – baseline estimation – around here]

4.1. Splitting the sample period

Foreign investment inflows towards Europe has not been constant over time. Our data suggest a stagnating trend in the period 2011-2014, with an average amount of M&A of about 150 billion euro,

jumping to 270 billion in the following years 2015-2018 when the pre-crisis level was reached.[20] To account for different trends between the period 2011-2014 and the period 2015-2018, we replicate the analysis performed in Tab. 2, columns 5-8, spitting the sample periods in two period. Results presented in Tab. 3, confirm that equity restrictions are more likely to bite in the first period, but vanishing afterwards, while the opposite holds for key foreign personnel. This effect could point to the intention of foreign investors to keep the control of the acquired companies using foreign personnel from the headquarters. The variable capturing additional restrictions is always strongly significant, with a magnitude almost 2 times higher in the first period, while the screening approval becoming significant only in the second period.

[Tab. 3 – splitting the time period – around here]

4.2. Analysis by sectors

We use our dataset to dig into sector-specific responsiveness of cross-border investments to regulatory restrictions and divide the sample in the three according to the target destination of M&As: primary, secondary and tertiary sector.[21] Tab. 4 presents the results of the benchmark model confirming the literature in predicting sector specific effects of regulatory restrictiveness (see Van der Marel and Shepherd, 2013; Mistura and Roulet, 2019). As expected, the primary sector is hardly reactive to restrictions. Manufacturing is instead negatively affected by equity restrictions and by other restrictions (essentially repatriation of profits), the latter being much more relevant in deterring FDI than the former. Restriction on repatriation of profits and establishment of branches also deter investments in the service sectors while the rest of restrictions play little role. This result confirms the negative link between trade restrictiveness and trade flows found by Nordås and Rouzet (2017).

[Tab. 4 – by sector – around here]

In order to account for the specificities of the financial sector (highly regulated per se), in the tertiary sector we differentiate between deals with target in the financial sector and all the other deals (non-financial

[20] For a detailed trend of FDI flows in Europe, see the analysis conducted within the framework of the ESPON 2020 Cooperation Programme, which can be downloaded at the following link:
https://www.espon.eu/sites/default/files/attachments/ESPON%20FDI%20-%2001%20-%20Synthesis%20report.pdf.
[21] For further details on sectors, see section 2.

activities, Tab. 5). As expected, regulatory restrictiveness does not affect financial services while the effect on non-financial services is mainly driven by the variable *other restrictions*.

[Tab. 5 – Focus on Sector 3 – around here]

5. Robustness checks

To perform robustness checks we have used the Gamma Pseudo Maximum likelihood estimator (GPML) instead of the Poisson estimator (PPML). The Poisson estimator assumes a constant variance-to-mean ratio of the dependent variable. This estimator could be biased in case that the error term does not follow a Poisson distribution (e.g. log-normal). Therefore, we implement an alternative estimator (GPML) that assigns lower weight to observations with larger means, generating efficiency gains in case these observations are characterised by higher variance. Moreover, as the PPML, a high number of zeros in the dependent variables does not affect the GPML. As suggested by Head and Mayer (2014), if the Poisson and Gamma PML coefficients do not exhibit major divergence, there is no signal of model miss-specification. Tab. A1 in Appendix reports GPML results for the baseline model and show the consistency of estimates between the two estimators. When restrictions are broken down by sector level, GPML confirms sign and significance of *equity restrictions* and *other restrictions*, while restrictions on key foreign personnel (weakly significant with the PPML estimator) and the presence of a screening mechanism are not statistically significant any longer.

6. Conclusions

We study the effect of restrictive policies on cross-border M&A flows into the EU by implementing an augmented gravity model. Is the presence of a screening mechanism indeed a deterrent to foreign investment? Are other national characteristics important for determining the amount of FDI, such as the legal system or limitations on foreign nationals sitting on company boards? We show that, on average, regulatory restrictions have a negative effect on cross-border investments. Our results show that different restrictive measures affect cross-border investment unequally, while the presence of a screening mechanism per se does not negatively affect cross-border investment. The take-away messages for the policy agenda are therefore two. The first comes from the sector specific analysis: regulatory restrictions

influence cross-border investments unevenly, depending on the target sector. Policies addressed to drive up inward investments should tailor regulatory restrictions to the targeted sectors in order to avoid discouraging investments. In particular, manufacturing and non-financial services results negatively affected by restrictive measures, such as restrictions on foreign personnel being employed in key positions, or restriction on the establishment of branches, land acquisition or profit and capital repatriations.

The second take-away is more general: the existence of a screening mechanism does not *per se* affect investment, only specific restrictions actually seems to affect cross-border links. This is good news for the forthcoming screening regulation.

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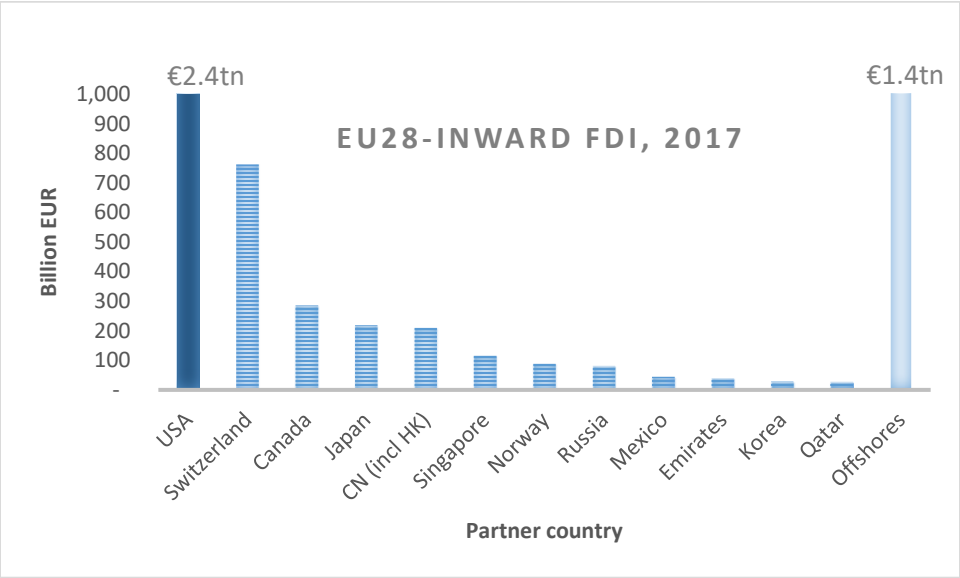
Figure 1. Non-EU investments in Europe, Inward FDI positions in EU28, 2017. Data by partner country.



Source: JRC-ECFIN FinFlows data.

Table 1A. Summary statistics

Variables	Source	Obs.	Mean	SD	Min.	Max.
Dependent variable						
M&A	Orbis	7,294	232.8683	727.4334	0.0071	11,204.5832
Restrictiveness indexes						
RI - all types of restrictions	OECD	7,294	0.0245	0.0772	0	1
RI - equity restrictions	OECD	7,294	0.0171	0.0712	0	1
RI - key foreign personnel	OECD	7,294	0.0007	0.0066	0	0.0750
RI - other restrictions	OECD	7,294	0.0032	0.0095	0	0.1000
RI - screening approval	OECD	7,294	0.0034	0.0258	0	0.2000
Bilateral indicators						
Distance	CEPII	7,294	3,786.71	3,933.58	160.93	19,516.56
GDP of the origin country	CEPII, World Bank	7,294	3,428.05	5,483.53	0.76	19,390.60
GDP of the destination country	CEPII, World Bank	7,294	1,601.03	1,226.36	19.48	3,879.28
Contiguity	CEPII	7,294	0.19	0.39	0	1
Common language	CEPII	7,294	0.21	0.41	0	1
Colonial links	CEPII	7,294	0.17	0.37	0	1
Common legal origins	CEPII	7,294	0.35	0.48	0	1
Time difference	CEPII	7,294	2.96	3.39	0	12
Regional trade agreements	CEPII	7,294	0.67	0.47	0	1
Origin country from EU		7,294	0.53	0.50	0	1
Government indicators						
Government effectiveness	World Bank	7,294	1.40	0.44	0.23	2.24
Regulatory quality	World Bank	7,294	1.44	0.41	0.15	2.05
Trade openness	World Bank	7,294	0.98	0.60	0.52	4.16
Tax indicator	KPMG	7,294	2.15	5.36	-13.00	11.99

Notes: Data for M&A refer to the period 2011-2018 in million EUR (one observation for each country pair, year and subsector), while for all other variables data relate to the period from 2010 to 2017 (they are lagged by 1 year to limit endogeneity issues). GDP values are in billion EUR. The table includes information for observations where the value of M&A is positive.

Table 1B. Summary statistics, by sector

Variables	Sector	Obs.	Mean	SD	Min.	Max.
M&A	Primary	326	319.0143	896.8906	0.0461	6002.9072
RI - all types of restrictions	Primary	326	0.0189	0.0729	0.0000	0.5500
RI - equity restrictions	Primary	326	0.0126	0.0676	0.0000	0.5000
RI - key foreign personnel	Primary	326	0.0001	0.0009	0	0.0090
RI - other restrictions	Primary	326	0.0060	0.0180	0	0.1000
RI - screening approval	Primary	326	0.0003	0.0050	0	0.0900
M&A	Secondary	2,865	262.8464	807.5391	0.0070	11204.5800
RI - all types of restrictions	Secondary	2,865	0.0023	0.0327	0	1
RI - equity restrictions	Secondary	2,865	0.0011	0.0324	0	1
RI - key foreign personnel	Secondary	2,865	0.0000	0.0000	0	0
RI - other restrictions	Secondary	2,865	0.0012	0.0046	0	0.0230
RI - screening approval	Secondary	2,865	0.0000	0.0000	0	0
M&A	Tertiary	4,103	205.0909	647.8962	0.0070	7,721.6740
RI - all types of restrictions	Tertiary	4,103	0.0405	0.0943	0	1
RI - equity restrictions	Tertiary	4,103	0.0288	0.0875	0	1
RI - key foreign personnel	Tertiary	4,103	0.0013	0.0086	0	0.0750
RI - other restrictions	Tertiary	4,103	0.0044	0.0106	0	0.0680
RI - screening approval	Tertiary	4,103	0.0061	0.0344	0	0.2000

Notes: Data for M&A refer to the period 2011-2018 in million EUR (one observation for each country pair, year and subsector), while for all other variables data relate to the period from 2010 to 2017 (they are lagged by 1 year to limit endogeneity issues). Tertiary sector includes also Real estate.

Table 2. RIs' effects and M&A, baseline estimation (PPML, period 2011-2018)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
RI - all types of restrictions $_{j,t-1}$	-2.68***	-2.65***	-2.51***	-1.33***				
	(0.53)	(0.53)	(0.51)	(0.48)				
RI - equity restrictions $_{j,t-1}$					-1.18**			
					(0.47)			
RI - key foreign personnel $_{j,t-1}$						-9.98**		
						(4.58)		
RI - other restrictions $_{j,t-1}$							-20.37***	
							(4.07)	
RI - screening approval $_{j,t-1}$								3.84**
								(1.60)
ln(Distance)$_{ij,t-1}$	-0.55***	-1.10***	-0.97***	-0.97***	-0.97***	-0.97***	-0.98***	-0.97***
	(0.07)	(0.16)	(0.15)	(0.15)	(0.15)	(0.15)	(0.15)	(0.15)
ln(GDP origin country)$_{i,t-1}$	0.91***	0.73***	0.73***	0.73***	0.73***	0.73***	0.73***	0.73***
	(0.08)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)
ln(GDP destination country)$_{j,t-1}$	0.82***	0.77***	0.83***	0.83***	0.84***	0.84***	0.81***	0.86***
	(0.07)	(0.06)	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)
Contiguity$_{ij,t-1}$		-0.56**	-0.50*	-0.50*	-0.50*	-0.50*	-0.51*	-0.50*
		(0.26)	(0.27)	(0.27)	(0.27)	(0.27)	(0.26)	(0.27)
Common language$_{ij,t-1}$		0.82***	0.67***	0.67***	0.67***	0.66***	0.73***	0.66***
		(0.20)	(0.21)	(0.21)	(0.21)	(0.21)	(0.22)	(0.21)
Colonial links$_{ij,t-1}$		0.70***	0.82***	0.82***	0.82***	0.83***	0.79***	0.83***
		(0.19)	(0.18)	(0.18)	(0.18)	(0.18)	(0.18)	(0.18)
Common legal origins$_{ij,t-1}$		-0.01	0.01	0.01	0.01	0.01	0.00	0.01
		(0.16)	(0.16)	(0.16)	(0.16)	(0.16)	(0.15)	(0.16)
Time difference$_{ij,t-1}$		0.27***	0.25***	0.25***	0.25***	0.25***	0.25***	0.25***
		(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)
Regional trade agreements$_{ij,t-1}$		-0.13	-0.06	-0.06	-0.06	-0.06	-0.07	-0.06
		(0.21)	(0.20)	(0.20)	(0.20)	(0.20)	(0.21)	(0.20)
Origin country from EU$_{i,t-1}$		0.71***	0.73***	0.73***	0.73***	0.73***	0.74***	0.73***
		(0.24)	(0.26)	(0.26)	(0.26)	(0.26)	(0.25)	(0.26)
Government effectiveness$_{j,t-1}$			-0.15	-0.14	-0.15	-0.15	-0.07	-0.14
			(0.37)	(0.37)	(0.37)	(0.37)	(0.36)	(0.37)
Regulatory quality$_{j,t-1}$			0.54	0.55	0.55	0.54	0.48	0.51
			(0.38)	(0.38)	(0.38)	(0.38)	(0.37)	(0.38)
Trade openness$_{j,t-1}$			0.34**	0.34***	0.35***	0.36***	0.34***	0.39***
			(0.13)	(0.13)	(0.13)	(0.13)	(0.12)	(0.13)
Tax indicator$_{j,t-1}$			0.01	0.01	0.01	0.01	0.02*	0.01
			(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Year fixed effects	no	yes	yes	yes	yes	yes	yes	yes
Sector fixed effects	no	no	no	yes	yes	yes	yes	yes
Observations	372,416	372,416	372,416	372,416	372,416	372,416	372,416	372,416
Pseudo-R^2	0.03	0.04	0.05	0.05	0.05	0.05	0.05	0.05

Notes: This table shows the baseline results from implementing the PPML model. The dependent variable is the value of bilateral M&A in thousand EUR. All explanatory variables are lagged by 1 year. Robust standard errors are shown in parentheses. Robust standard errors clustered by country pair are shown in parenthesis. The symbols *, ** and *** indicate statistical significance at the 10 %, 5 % and 1 % levels, respectively.

Table 3. RIs' effects and M&A, splitting the time period (PPML, period 2011-2018)

	Panel A: Period 2011-2014				Panel B: Period 2015-2018			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
RI - equity restrictions $_{j,t-1}$	-1.97**				-0.72			
	(0.90)				(0.50)			
RI - key foreign personnel $_{j,t-1}$		-5.71				-13.64***		
		(6.10)				(5.03)		
RI - other restrictions $_{j,t-1}$			-27.90***				-15.93***	
			(5.83)				(4.73)	
RI - screening approval $_{j,t-1}$				0.83				5.55***
				(3.33)				(1.88)
ln(Distance)$_{ij,t-1}$	-0.82***	-0.82***	-0.83***	-0.82***	-1.05***	-1.05***	-1.06***	-1.06***
	(0.16)	(0.16)	(0.16)	(0.16)	(0.17)	(0.17)	(0.17)	(0.17)
ln(GDP origin country)$_{i,t-1}$	0.77***	0.77***	0.77***	0.77***	0.71***	0.71***	0.71***	0.71***
	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)
ln(GDP destination country)$_{j,t-1}$	0.63***	0.64***	0.64***	0.64***	0.99***	0.99***	0.96***	1.03***
	(0.08)	(0.08)	(0.08)	(0.08)	(0.11)	(0.11)	(0.11)	(0.11)
Contiguity$_{ij,t-1}$	-0.37	-0.37	-0.39	-0.37	-0.56*	-0.56*	-0.57**	-0.56*
	(0.27)	(0.27)	(0.27)	(0.27)	(0.29)	(0.29)	(0.29)	(0.29)
Common language$_{ij,t-1}$	0.77***	0.76***	0.84***	0.77***	0.62**	0.62**	0.68***	0.62**
	(0.23)	(0.23)	(0.23)	(0.23)	(0.25)	(0.25)	(0.25)	(0.25)
Colonial links$_{ij,t-1}$	0.59***	0.59***	0.55***	0.59***	0.91***	0.91***	0.90***	0.91***
	(0.19)	(0.18)	(0.19)	(0.18)	(0.22)	(0.21)	(0.21)	(0.21)
Common legal origins$_{ij,t-1}$	0.31*	0.30*	0.30*	0.30*	-0.17	-0.17	-0.17	-0.16
	(0.16)	(0.16)	(0.16)	(0.16)	(0.18)	(0.18)	(0.18)	(0.18)
Time difference$_{ij,t-1}$	0.23***	0.23***	0.24***	0.23***	0.26***	0.26***	0.26***	0.26***
	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)
Regional trade agreements$_{ij,t-1}$	0.04	0.04	0.03	0.05	-0.12	-0.12	-0.13	-0.12
	(0.29)	(0.29)	(0.29)	(0.29)	(0.22)	(0.22)	(0.22)	(0.22)
Origin country from EU$_{i,t-1}$	0.73**	0.73**	0.74**	0.73**	0.72**	0.72**	0.73**	0.72**
	(0.31)	(0.31)	(0.31)	(0.31)	(0.30)	(0.30)	(0.30)	(0.30)
Government effectiveness$_{j,t-1}$	-0.68*	-0.66*	-0.35	-0.66*	0.24	0.24	0.20	0.25
	(0.40)	(0.40)	(0.40)	(0.40)	(0.54)	(0.54)	(0.52)	(0.54)
Regulatory quality$_{j,t-1}$	1.28***	1.26**	0.86*	1.26**	0.06	0.05	0.11	0.00
	(0.49)	(0.49)	(0.49)	(0.49)	(0.53)	(0.53)	(0.51)	(0.54)
Trade openness$_{j,t-1}$	0.20	0.22	0.26	0.22	0.49***	0.50***	0.46***	0.54***
	(0.22)	(0.22)	(0.21)	(0.21)	(0.16)	(0.16)	(0.15)	(0.16)
Tax indicator$_{j,t-1}$	0.03	0.03	0.03*	0.03	0.00	0.00	0.01	0.00
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Year fixed effects	yes	yes	yes	yes	yes	yes	yes	yes
Sector fixed effects	yes	yes	yes	yes	yes	yes	yes	yes
Observations	186,208	186,208	186,208	186,208	186,208	186,208	186,208	186,208
Pseudo-R^2	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04

Notes: This table shows the baseline results from implementing the PPML model. The dependent variable is the value of bilateral M&A in thousand EUR. All explanatory variables are lagged by 1 year. Robust standard errors are shown in parentheses. Robust standard errors clustered by country pair are shown in parenthesis. The symbols *, ** and *** indicate statistical significance at the 10 %, 5 % and 1 % levels, respectively.

Table 4. RIs' effects and M&A, by sector (PPML, period 2011-2018)

	Primary sector				Secondary sector				Tertiary sector			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
RI - equity restrictions $_{j,t-1}$	0.55				-2.62**				-0.50			
	(1.86)				(1.21)				(1.08)			
RI - key foreign personnel $_{j,t-1}$		-29.41				-				-10.19*		
		(58.77)								(5.27)		
RI - other restrictions $_{j,t-1}$			-36.32				-39.41***				-15.56***	
			(22.59)				(14.75)				(4.63)	
RI - screening approval $_{j,t-1}$				21.72				-				1.60
				(13.86)								(1.95)
ln(Distance)$_{ij,t-1}$	-1.25***	-1.25***	-1.28***	-1.25***	-1.04***	-1.04***	-1.07***	-1.04***	-0.91***	-0.91***	-0.92***	-0.92***
	(0.35)	(0.35)	(0.35)	(0.35)	(0.20)	(0.20)	(0.21)	(0.20)	(0.18)	(0.18)	(0.17)	(0.18)
ln(GDP origin country)$_{i,t-1}$	0.36***	0.36***	0.35***	0.36***	0.84***	0.84***	0.84***	0.84***	0.71***	0.71***	0.71***	0.71***
	(0.12)	(0.12)	(0.12)	(0.12)	(0.08)	(0.08)	(0.08)	(0.08)	(0.08)	(0.08)	(0.08)	(0.08)
ln(GDP destination country)$_{j,t-1}$	0.95***	0.96***	0.83***	0.98***	0.78***	0.79***	0.71***	0.79***	0.89***	0.89***	0.89***	0.90***
	(0.28)	(0.28)	(0.28)	(0.29)	(0.09)	(0.09)	(0.09)	(0.09)	(0.10)	(0.10)	(0.10)	(0.10)
Contiguity$_{ij,t-1}$	-1.14	-1.14	-1.14*	-1.14	-0.25	-0.25	-0.30	-0.25	-0.72***	-0.71***	-0.70***	-0.72***
	(0.70)	(0.70)	(0.67)	(0.70)	(0.37)	(0.37)	(0.37)	(0.37)	(0.26)	(0.26)	(0.25)	(0.26)
Common language$_{ij,t-1}$	0.95	0.95	1.01	0.96	0.28	0.28	0.42	0.28	0.93***	0.92***	0.97***	0.93***
	(0.74)	(0.74)	(0.80)	(0.74)	(0.30)	(0.30)	(0.31)	(0.30)	(0.22)	(0.22)	(0.22)	(0.22)
Colonial links$_{ij,t-1}$	0.85	0.85	0.84	0.86	0.69***	0.69***	0.63**	0.69***	0.86***	0.86***	0.83***	0.86***
	(0.53)	(0.53)	(0.52)	(0.53)	(0.25)	(0.25)	(0.26)	(0.25)	(0.20)	(0.20)	(0.20)	(0.20)
Common legal origins$_{ij,t-1}$	0.34	0.34	0.36	0.34	-0.17	-0.17	-0.18	-0.17	0.16	0.16	0.15	0.16
	(0.70)	(0.70)	(0.70)	(0.69)	(0.21)	(0.21)	(0.21)	(0.21)	(0.15)	(0.15)	(0.15)	(0.15)
Time difference$_{ij,t-1}$	0.30***	0.30***	0.31***	0.30***	0.25***	0.25***	0.26***	0.25***	0.25***	0.25***	0.25***	0.25***
	(0.10)	(0.10)	(0.10)	(0.10)	(0.05)	(0.05)	(0.06)	(0.05)	(0.06)	(0.06)	(0.06)	(0.06)
Regional trade agreements$_{ij,t-1}$	-0.72	-0.71	-0.73	-0.71	0.12	0.12	0.11	0.12	-0.07	-0.07	-0.08	-0.07
	(0.74)	(0.74)	(0.73)	(0.74)	(0.21)	(0.21)	(0.21)	(0.21)	(0.30)	(0.30)	(0.30)	(0.30)
Origin country from EU$_{i,t-1}$	0.57	0.57	0.58	0.57	0.37	0.37	0.40	0.37	1.03***	1.03***	1.04***	1.03***
	(0.62)	(0.62)	(0.63)	(0.62)	(0.42)	(0.42)	(0.40)	(0.42)	(0.25)	(0.25)	(0.25)	(0.25)
Government effectiveness$_{j,t-1}$	1.63	1.64	1.78	1.77	-0.65	-0.66	-0.66	-0.66	0.17	0.13	0.31	0.19
	(1.62)	(1.62)	(1.56)	(1.68)	(0.49)	(0.49)	(0.48)	(0.49)	(0.42)	(0.42)	(0.41)	(0.42)
Regulatory quality$_{j,t-1}$	0.40	0.37	0.03	0.34	1.24**	1.24**	1.29**	1.24**	-0.08	-0.06	-0.22	-0.12
	(1.68)	(1.68)	(1.53)	(1.73)	(0.53)	(0.54)	(0.52)	(0.54)	(0.47)	(0.47)	(0.46)	(0.47)
Trade openness$_{j,t-1}$	0.62*	0.62*	0.47	0.65*	0.13	0.14	0.10	0.14	0.47**	0.47**	0.48***	0.50***
	(0.34)	(0.34)	(0.36)	(0.35)	(0.18)	(0.18)	(0.16)	(0.18)	(0.19)	(0.19)	(0.18)	(0.19)
Tax indicator$_{j,t-1}$	-0.03	-0.03	-0.01	-0.03	0.04**	0.04**	0.05***	0.04**	-0.00	-0.00	0.01	-0.00
	(0.06)	(0.06)	(0.07)	(0.06)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Year fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Subsector fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Observations	67,712	67,712	67,712	67,712	118,496	118,496	118,496	118,496	169,280	169,280	169,280	169,280
Pseudo-R^2	0.02	0.02	0.02	0.02	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05

Notes: This table shows the baseline results from implementing the PPML model. The dependent variable is the value of bilateral M&A in thousand EUR. All explanatory variables are lagged by 1 year. Robust standard errors are shown in parentheses. Robust standard errors clustered by country pair are shown in parenthesis. The symbols *, ** and *** indicate statistical significance at the 10 %, 5 % and 1 % levels, respectively.

Table 5. RIs' effects and M&A, financial vs non-financial services (PPML, period 2011-2018)

	Financial services				Non-financial services			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
RI - equity restrictions $_{j,t-1}$	-				-0.31			
					(1.06)			
RI - key foreign personnel $_{j,t-1}$		-15.72				-9.73*		
		(28.25)				(5.49)		
RI - other restrictions $_{j,t-1}$			-9.39				-18.51***	
			(5.86)				(6.93)	
RI - screening approval $_{j,t-1}$				-				1.51
								(1.97)
ln(Distance)$_{ij,t-1}$	-0.58*	-0.58*	-0.58*	-0.58*	-1.04***	-1.04***	-1.05***	-1.04***
	(0.31)	(0.31)	(0.31)	(0.31)	(0.20)	(0.20)	(0.20)	(0.20)
ln(GDP origin country)$_{i,t-1}$	0.72***	0.72***	0.72***	0.72***	0.71***	0.71***	0.71***	0.71***
	(0.12)	(0.12)	(0.12)	(0.12)	(0.08)	(0.08)	(0.08)	(0.08)
ln(GDP destination country)$_{j,t-1}$	0.86***	0.88***	0.89***	0.86***	0.90***	0.90***	0.88***	0.92***
	(0.11)	(0.11)	(0.11)	(0.11)	(0.13)	(0.13)	(0.13)	(0.14)
Contiguity$_{ij,t-1}$	-0.12	-0.11	-0.11	-0.12	-0.96***	-0.94***	-0.94***	-0.96***
	(0.38)	(0.38)	(0.38)	(0.38)	(0.29)	(0.29)	(0.28)	(0.29)
Common language$_{ij,t-1}$	0.86***	0.85***	0.87***	0.86***	0.99***	0.98***	1.05***	0.99***
	(0.33)	(0.33)	(0.32)	(0.33)	(0.25)	(0.25)	(0.24)	(0.25)
Colonial links$_{ij,t-1}$	0.89***	0.89***	0.90***	0.89***	0.82***	0.81***	0.75***	0.82***
	(0.31)	(0.31)	(0.30)	(0.31)	(0.22)	(0.22)	(0.22)	(0.22)
Common legal origins$_{ij,t-1}$	0.23	0.23	0.22	0.23	0.13	0.13	0.12	0.13
	(0.22)	(0.22)	(0.22)	(0.22)	(0.17)	(0.17)	(0.17)	(0.17)
Time difference$_{ij,t-1}$	0.11	0.11	0.11	0.11	0.31***	0.31***	0.32***	0.31***
	(0.08)	(0.08)	(0.08)	(0.08)	(0.07)	(0.07)	(0.07)	(0.07)
Regional trade agreements$_{ij,t-1}$	-0.20	-0.20	-0.21	-0.20	-0.01	-0.01	-0.01	-0.01
	(0.45)	(0.45)	(0.45)	(0.45)	(0.32)	(0.32)	(0.32)	(0.32)
Origin country from EU$_{i,t-1}$	0.67*	0.66*	0.66*	0.67*	1.22***	1.22***	1.24***	1.22***
	(0.36)	(0.36)	(0.36)	(0.36)	(0.31)	(0.30)	(0.30)	(0.31)
Government effectiveness$_{j,t-1}$	-0.63	-0.62	-0.43	-0.63	0.53	0.47	0.58	0.54
	(0.67)	(0.68)	(0.67)	(0.67)	(0.48)	(0.50)	(0.48)	(0.49)
Regulatory quality$_{j,t-1}$	0.60	0.61	0.28	0.60	-0.34	-0.32	-0.32	-0.39
	(0.70)	(0.71)	(0.71)	(0.70)	(0.58)	(0.57)	(0.56)	(0.59)
Trade openness$_{j,t-1}$	0.43**	0.45**	0.46**	0.43**	0.47*	0.47**	0.46**	0.51**
	(0.20)	(0.20)	(0.19)	(0.20)	(0.24)	(0.24)	(0.23)	(0.24)
Tax indicator$_{j,t-1}$	-0.02	-0.02	-0.02	-0.02	0.01	0.01	0.02	0.00
	(0.03)	(0.03)	(0.03)	(0.03)	(0.02)	(0.02)	(0.02)	(0.02)
Year fixed effects	yes	yes	yes	yes	yes	yes	yes	yes
Subsector fixed effects	yes	yes	yes	yes	yes	yes	yes	yes
Observations	50,784	50,784	50,784	50,784	118,496	118,496	118,496	118,496
Pseudo-R^2	0.03	0.03	0.03	0.03	0.06	0.06	0.06	0.06

Notes: This table shows the baseline results from implementing the PPML model. The dependent variable is the value of bilateral M&A in thousand EUR. All explanatory variables are lagged by 1 year. Robust standard errors are shown in parentheses. Robust standard errors clustered by country pair are shown in parenthesis. The symbols *, ** and *** indicate statistical significance at the 10 %, 5 % and 1 % levels, respectively.

Appendix

Table A1. RI effects and M&A, robustness (GPML distribution, period 2011-2018)

`	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
RI - all types of restrictions $_{j,t-1}$	-2.39***	-2.52***	-2.23***	-1.48***				
	(0.48)	(0.51)	(0.52)	(0.57)				
RI - equity restrictions $_{j,t-1}$					-1.28**			
					(0.58)			
RI - key foreign personnel $_{j,t-1}$						-3.25		
						(10.42)		
RI - other restrictions $_{j,t-1}$							-22.39***	
							(6.73)	
RI - screening approval $_{j,t-1}$								-0.46
								(1.75)
ln(Distance)$_{ij,t-1}$	-0.47***	-1.22***	-1.56***	-1.59***	-1.58***	-1.57***	-1.61***	-1.58***
	(0.07)	(0.18)	(0.19)	(0.20)	(0.20)	(0.20)	(0.20)	(0.20)
ln(GDP origin country)$_{i,t-1}$	0.44***	0.40***	0.37***	0.37***	0.37***	0.37***	0.37***	0.37***
	(0.05)	(0.05)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
ln(GDP destination country)$_{j,t-1}$	0.78***	0.70***	1.15***	1.20***	1.20***	1.19***	1.16***	1.18***
	(0.08)	(0.08)	(0.12)	(0.12)	(0.12)	(0.12)	(0.12)	(0.12)
Contiguity$_{ij,t-1}$		-0.24	-0.70**	-0.88**	-0.89**	-0.88**	-0.81**	-0.88**
		(0.32)	(0.35)	(0.36)	(0.36)	(0.36)	(0.35)	(0.36)
Common language$_{ij,t-1}$		0.82***	0.70**	0.60**	0.59**	0.58*	0.71**	0.58*
		(0.27)	(0.30)	(0.30)	(0.30)	(0.30)	(0.31)	(0.30)
Colonial links$_{ij,t-1}$		1.54***	1.91***	1.91***	1.92***	1.93***	1.95***	1.93***
		(0.34)	(0.37)	(0.37)	(0.37)	(0.37)	(0.38)	(0.37)
Common legal origins$_{ij,t-1}$		-0.19	-0.23	-0.02	-0.01	0.03	-0.08	0.03
		(0.22)	(0.22)	(0.22)	(0.22)	(0.22)	(0.22)	(0.22)
Time difference$_{ij,t-1}$		0.39***	0.44***	0.43***	0.43***	0.42***	0.42***	0.43***
		(0.06)	(0.05)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)
Regional trade agreements$_{ij,t-1}$		-0.29	-0.05	-0.05	-0.04	-0.01	-0.12	-0.01
		(0.35)	(0.26)	(0.27)	(0.27)	(0.27)	(0.27)	(0.27)
Origin country from EU$_{i,t-1}$		1.13***	1.20***	1.11***	1.10***	1.06***	1.06***	1.05***
		(0.25)	(0.30)	(0.31)	(0.31)	(0.31)	(0.31)	(0.31)
Government effectiveness$_{j,t-1}$			0.62	0.64	0.64	0.65	0.95**	0.65
			(0.41)	(0.42)	(0.42)	(0.42)	(0.42)	(0.42)
Regulatory quality$_{j,t-1}$			-0.72	-0.67	-0.67	-0.64	-0.93**	-0.64
			(0.47)	(0.47)	(0.47)	(0.47)	(0.47)	(0.48)
Trade openness$_{j,t-1}$			0.89***	0.93***	0.94***	0.93***	0.88***	0.92***
			(0.17)	(0.18)	(0.18)	(0.18)	(0.18)	(0.18)
Tax indicator$_{j,t-1}$			0.02	0.01	0.01	0.01	0.01	0.02
			(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Year fixed effects	no	yes	yes	yes	yes	yes	yes	yes
Sector fixed effects	no	no	no	yes	yes	yes	yes	yes
Observations	372,416	372,416	372,416	372,416	372,416	372,416	372,416	372,416
Pseudo-R^2	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02

Notes: This table shows the baseline results from implementing the gamma distribution. The dependent variable is the value of bilateral M&A in thousand EUR. All explanatory variables are lagged by 1 year. Robust standard errors are shown in parentheses. Robust standard errors clustered by country pair are shown in parenthesis. The symbols *, ** and *** indicate statistical significance at the 10 %, 5 % and 1 % levels, respectively.

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